



Fig. 1

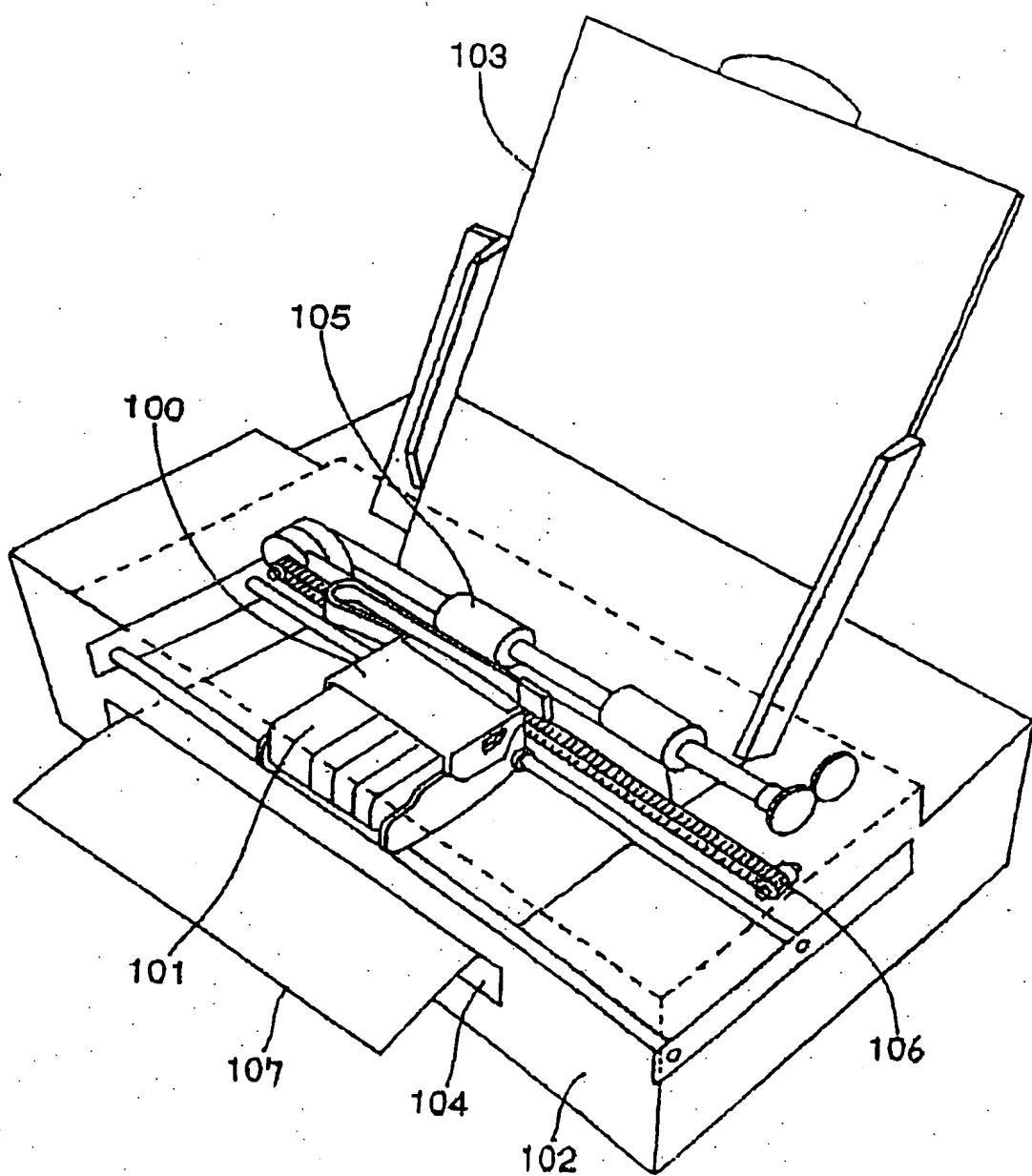
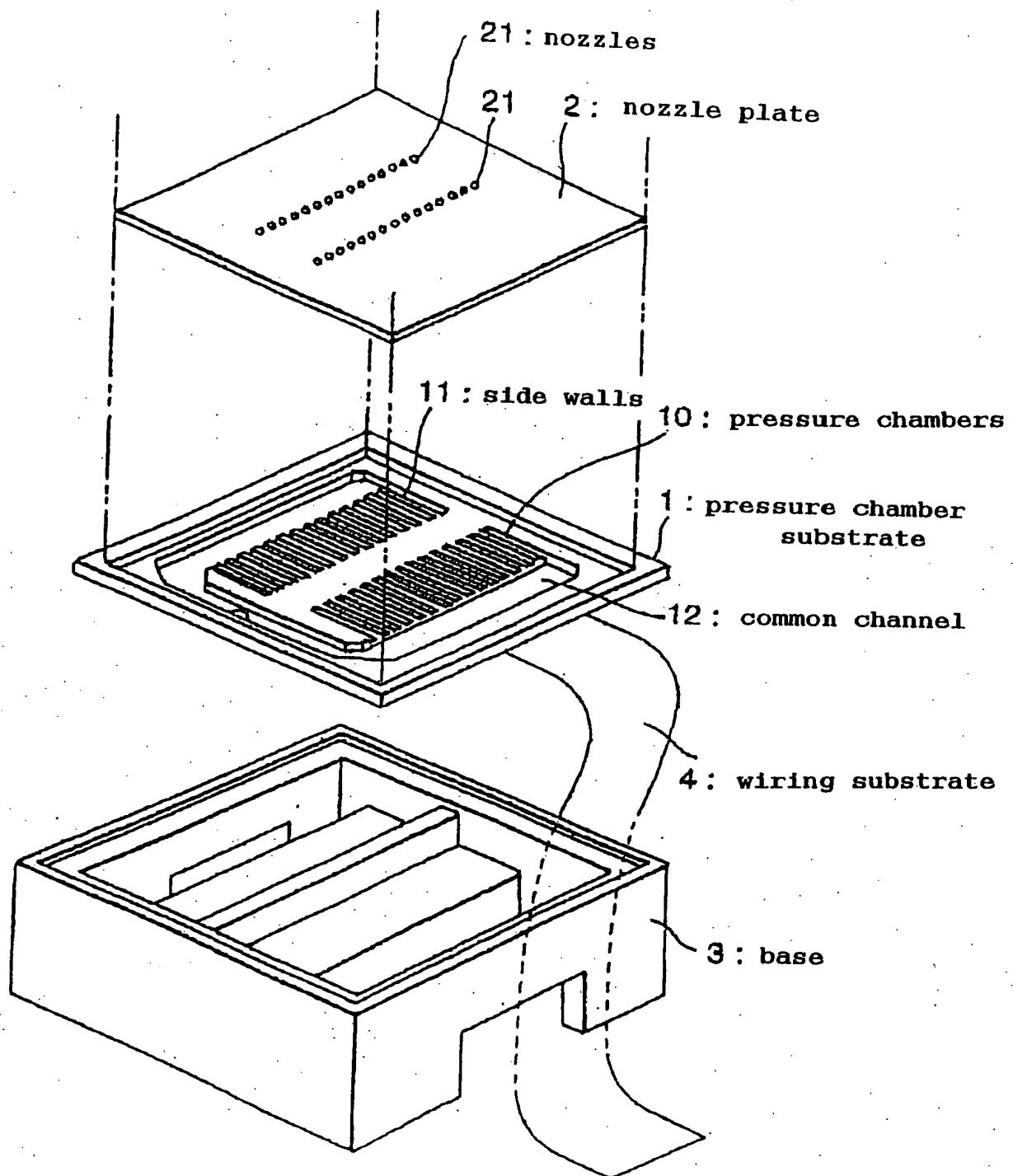


Fig. 2



Appl. No. 10/050,586; Filed: January 18, 2002
Dkt. No. 1089.0350001; Group Art Unit: 2834
Inventors: Qiu et al.; Tel: 202/371-2600
Title: Piezoelectric Element and Method of Manufacturing
Same

Fig. 3

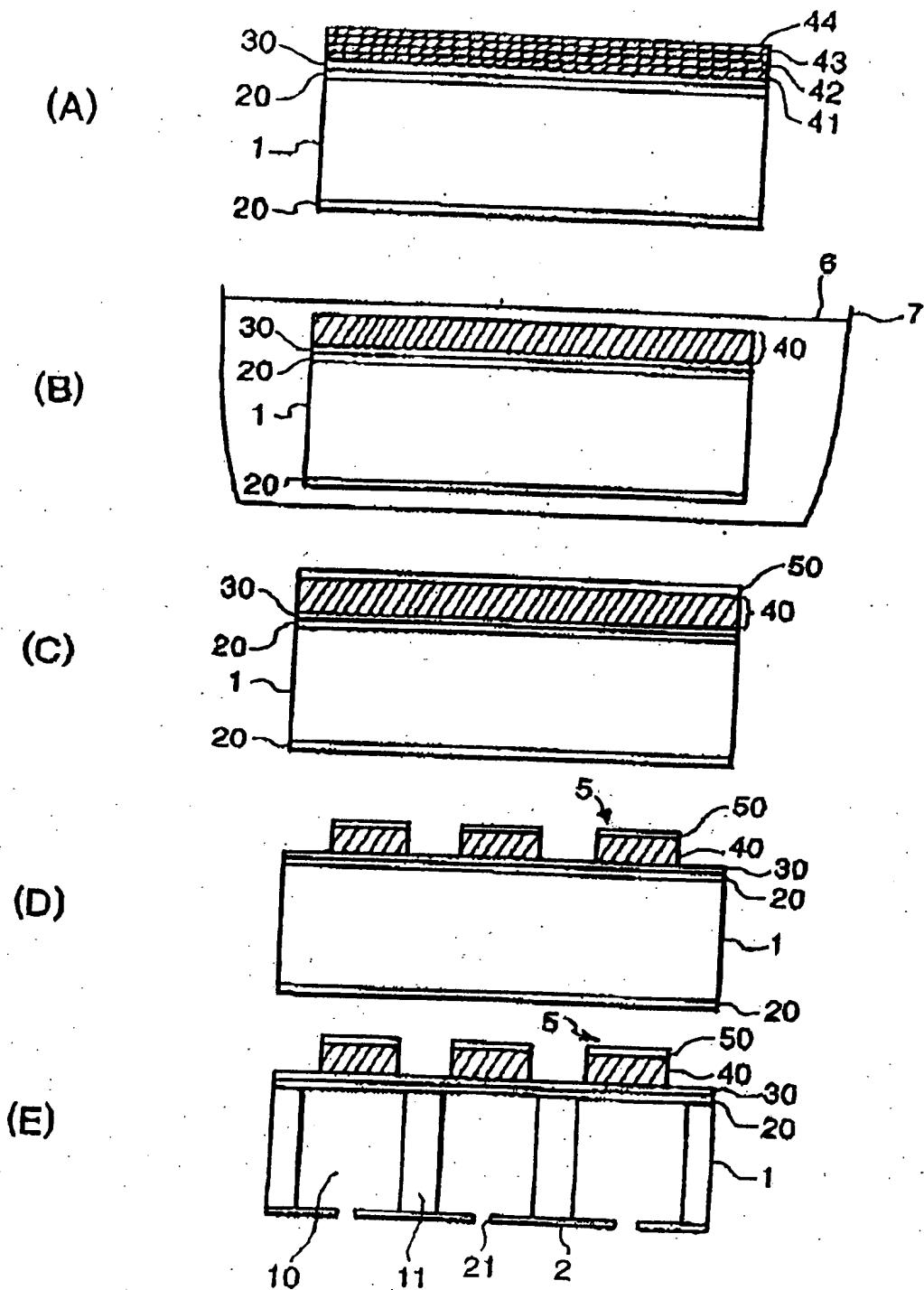


Fig. 4

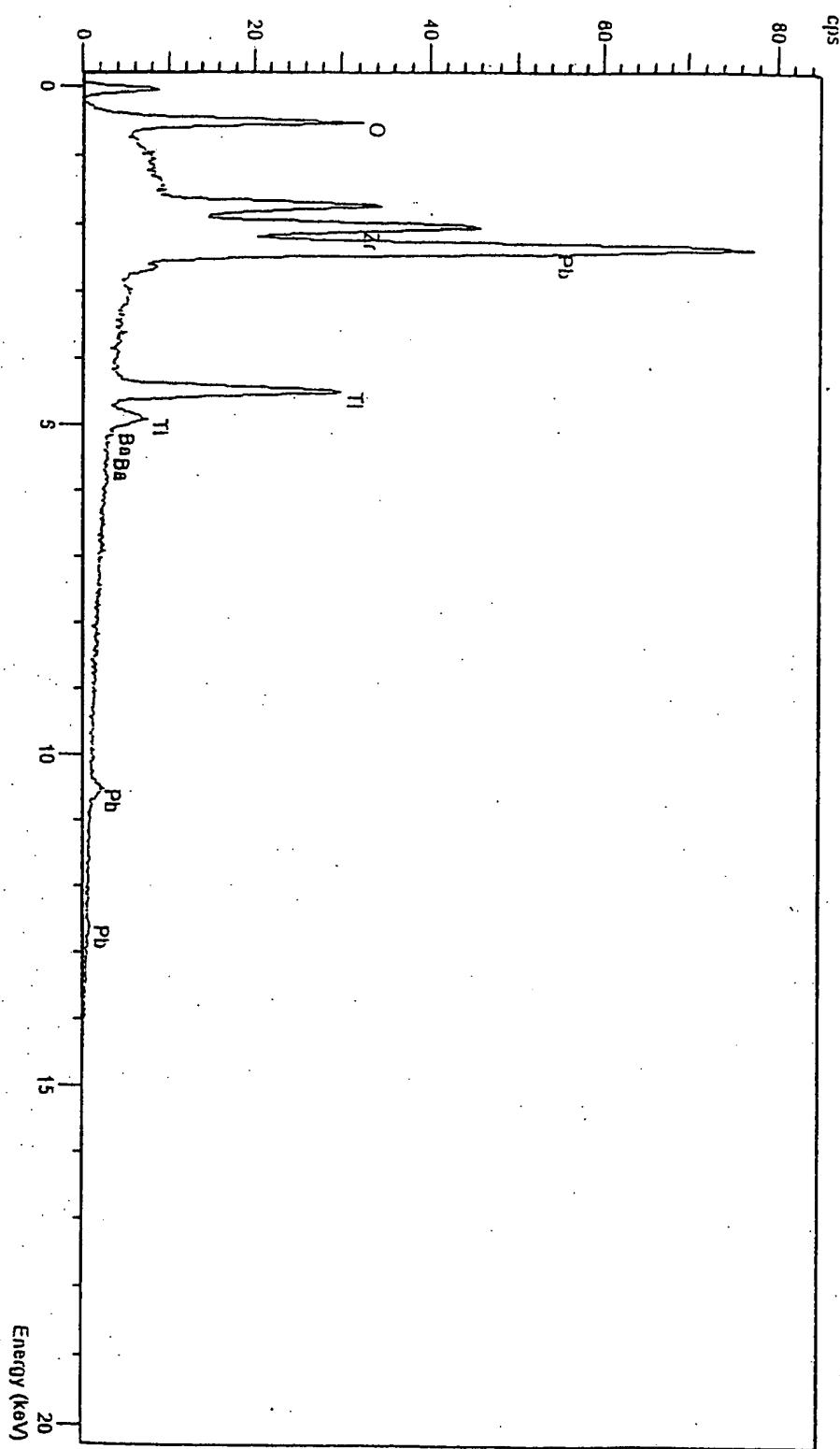


Fig. 5

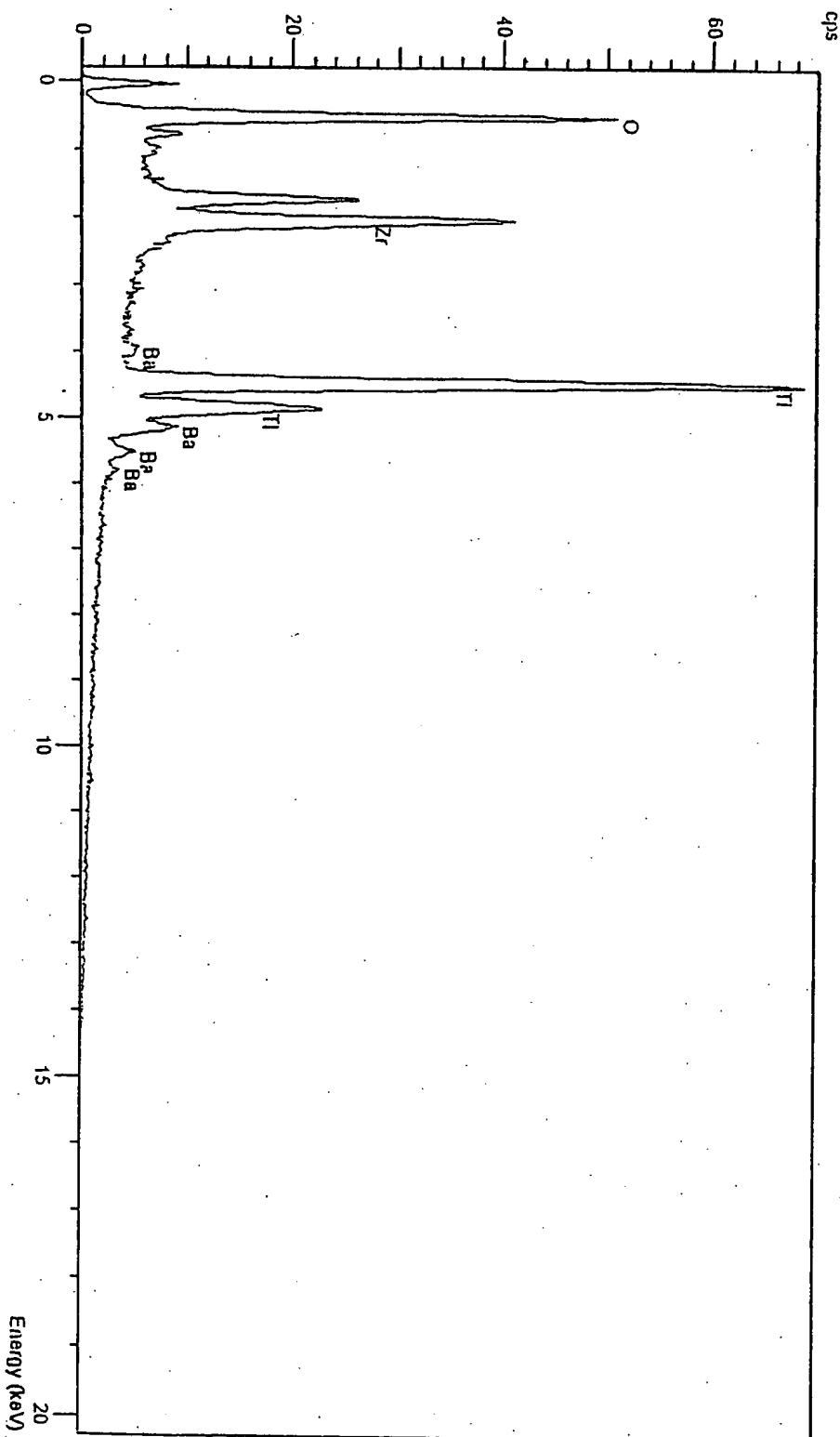


Fig. 6

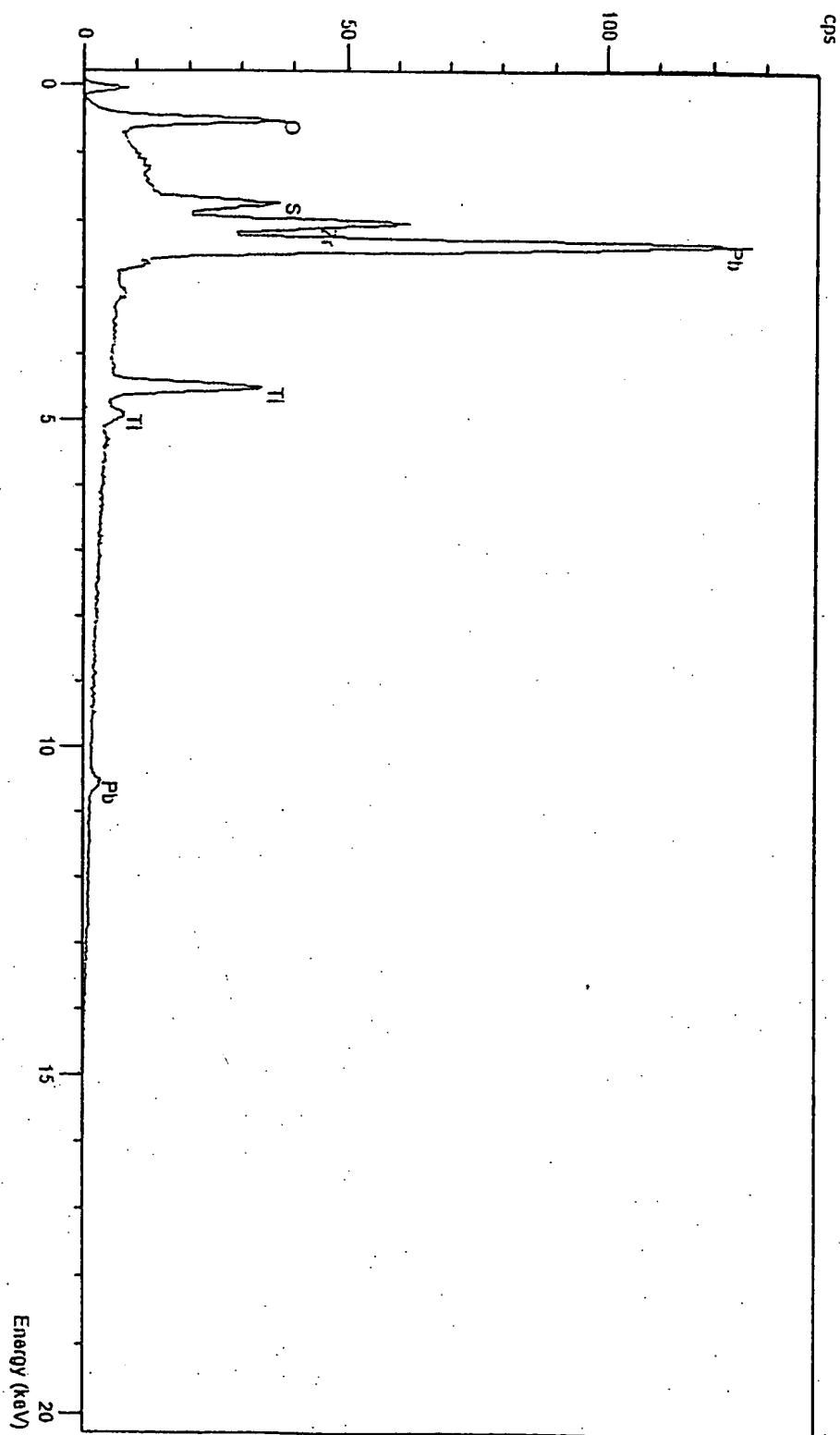


Fig. 7

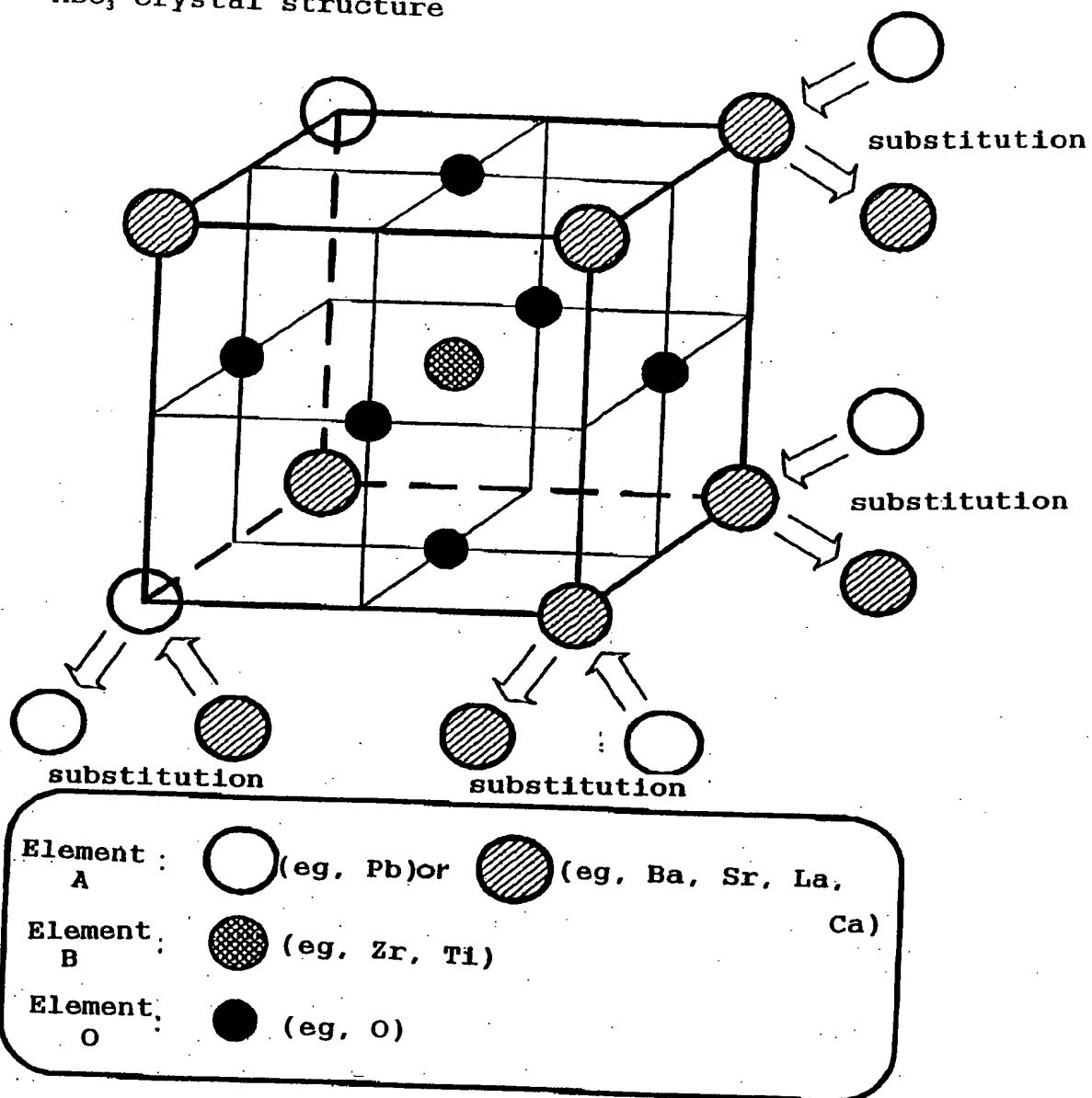
ABO₃ crystal structure

Fig. 8

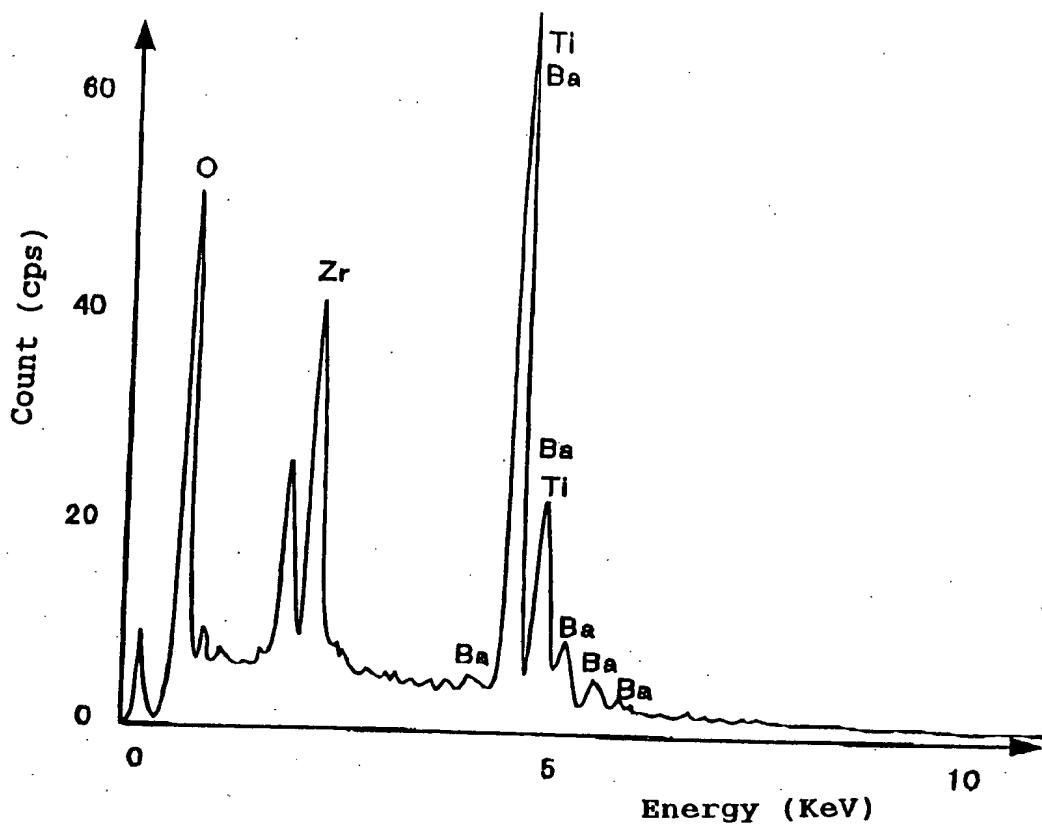


Fig. 9

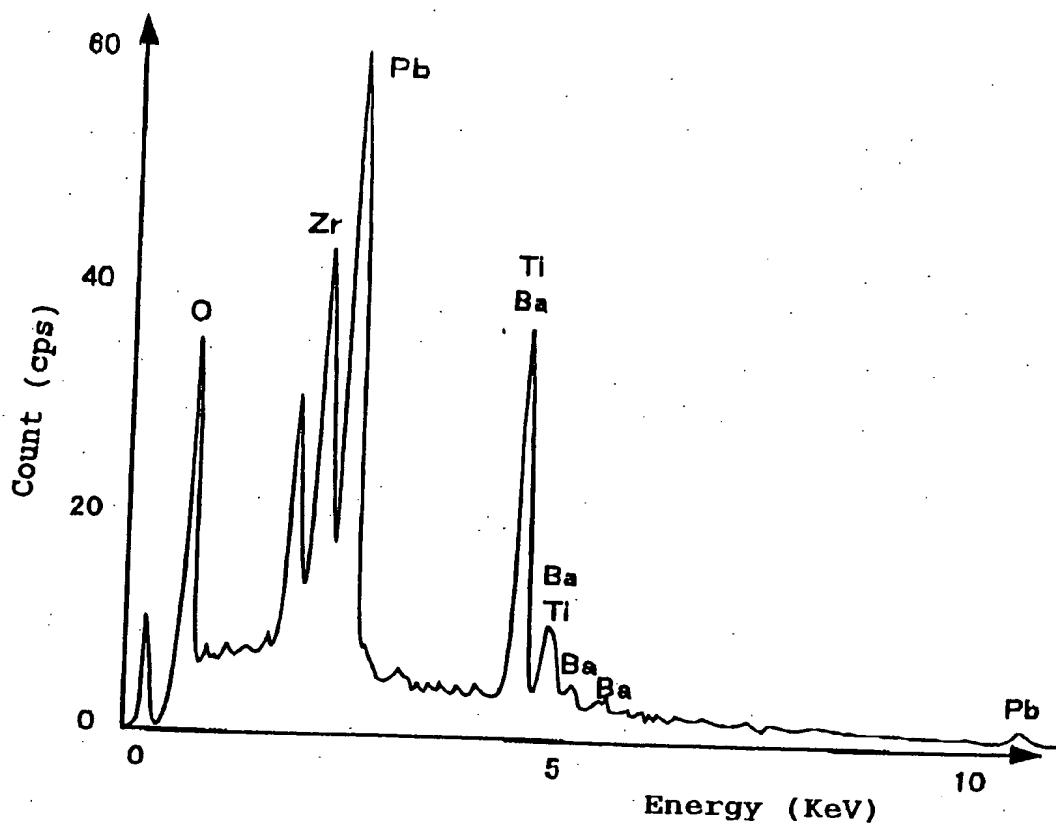


Fig. 10

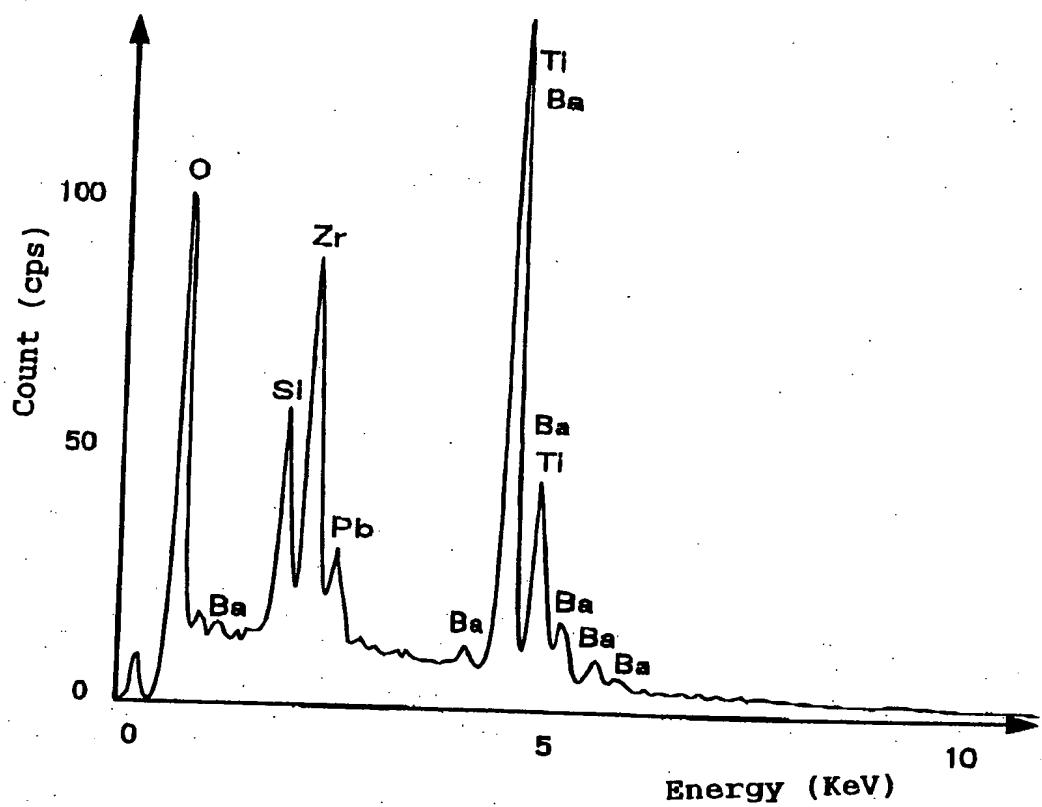
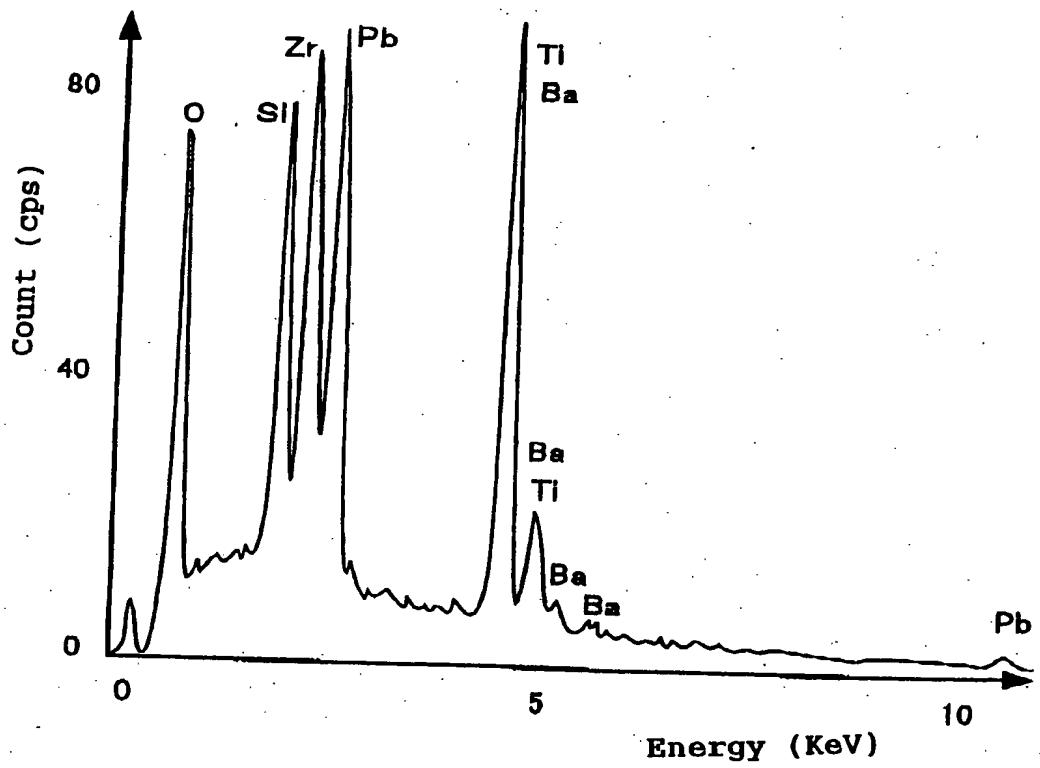


Fig. 11



Appl. No. 10/050,586; Filed: January 18, 2002
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Inventors: Qiu et al.; Tel: 202/371-2600
Title: Piezoelectric Element and Method of Manufacturing
Same

Fig. 12

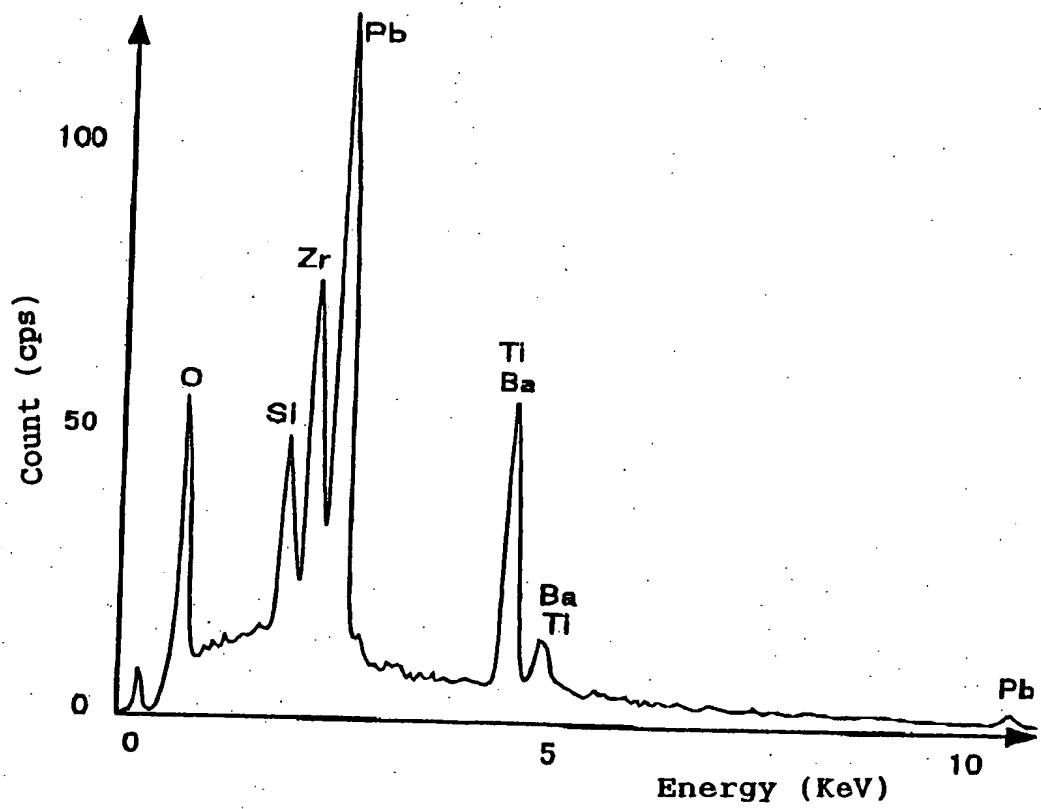
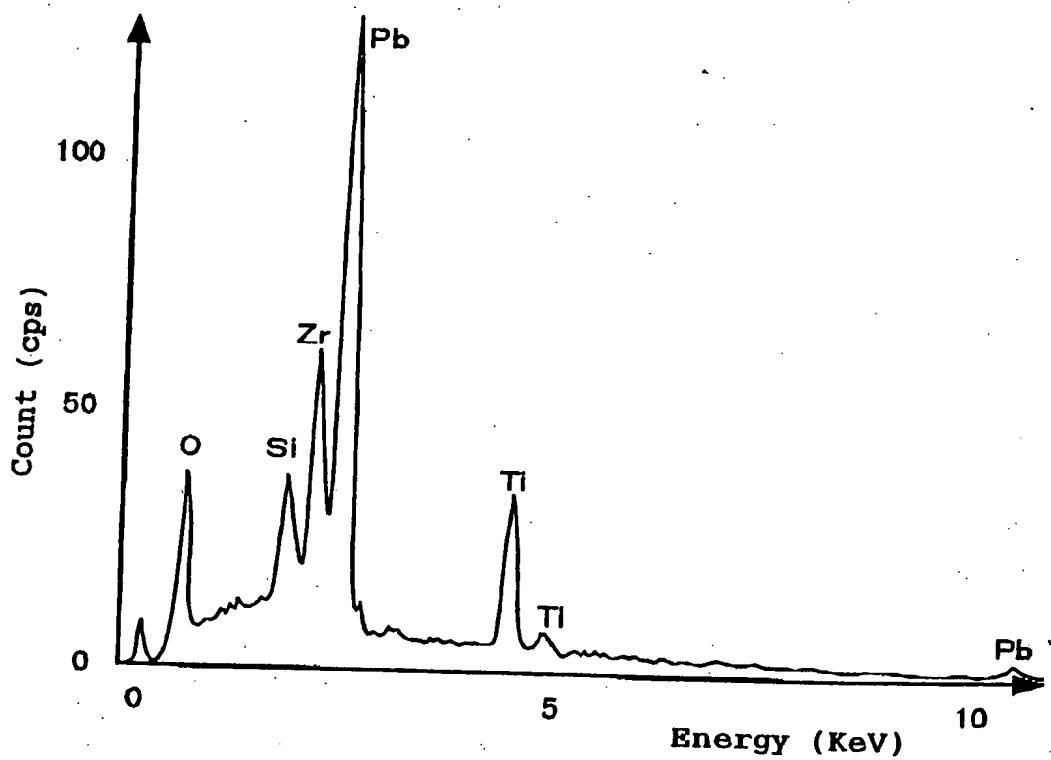


Fig. 13



Appl. No. 10/050,586; Filed: January 18, 2002
Dkt. No. 1089.0350001; Group Art Unit: 2834
Inventors: Qiu et al.; Tel: 202/371-2600
Title: Piezoelectric Element and Method of Manufacturing
Same

Fig. 14

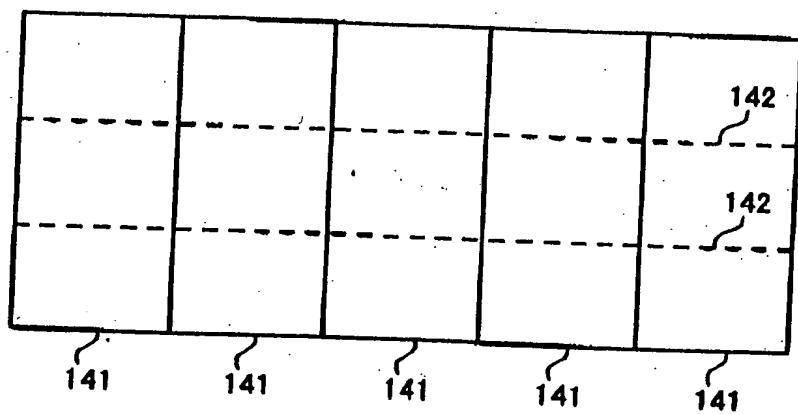
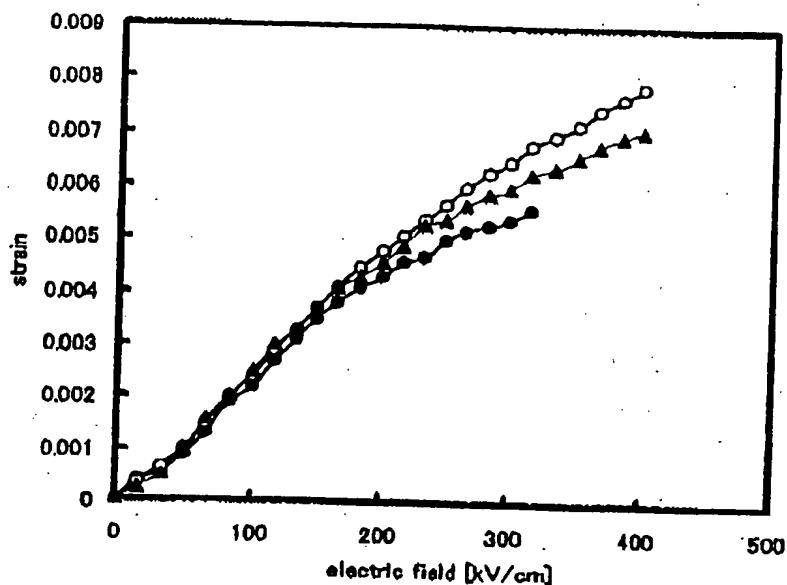


Fig. 15



Electric field strength dependence of strain

●—● dislocation: 4 layers
▲—▲ 3 layers
○—○ 1 layer

Note: Ultimate strain indicates the strain limit at which the film breaks.